IN THE CLAIMS

1. (currently amended) An electric motor comprising:

an input for receiving an electrical signal from a control unit;

a housing encapsulating a rotating member, said rotating member comprising a ball nut portion;

one or several arrangements for generating a magnetic field with respect to said electrical signal;

a displaceable shaft comprising a ball screw portion, ~~and~~ a ball return portion arranged on at least one of said displaceable shaft and said rotating member;

a carrying sleeve comprising, on its outer surface, magnetic elements, said carrying sleeve being provided on said rotating member substantially parallel with an extension direction of said shaft for interaction with said one or several arrangements for generating a magnetic field and rotating said ball nut; and

wherein said one or several arrangements for generating a magnetic field are configured to generate a magnetic field when a current corresponding to said electrical signal flows through said arrangements and to interact with said magnetic elements to produce a torque, which rotates the sleeve and the ball nut forcing said shaft to displace linearly.

2-9. (cancelled)

10. (previously presented) The arrangement of claim 1, wherein said sleeve is made of a laminated material.

11. (cancelled)

12. (previously presented) The arrangement of claim 1, wherein said ball return comprises a notch arranged diagonally on the ball nut, a preload system, a return cap and a wiper

arranged between the return cap and the shaft, grooves or ball tracks in which the balls run.

13. (currently amended) The arrangement of claim 1, wherein said ball return comprises a single linear screw in which a notch forces balls passing through the notch to change track to ~~the~~ an adjacent track.

14. (previously presented) The arrangement of claim 1, wherein said ball return comprises a ball nut having multiple linear ball returns.

15. (previously presented) The arrangement of claim 1, wherein said ball return comprises a single or multi liner system, in which the balls are lead back after each circulation around the shaft and the liner picks the balls out of a ball track and guides them with a path over the portion between the ball tracks of the shaft.

16. (previously presented) The arrangement of claim 1, wherein said ball return is provided with a return cap having a return channel, wherein said return cap system picks the balls up at one end of the nut and lead them back, through a hole in the nut, to the other side.

17. (currently amended) The arrangement of claim 1, wherein said ball return portion comprises a linear return placed in the shaft and the balls are lead through a path over a portion between ~~the~~ ball tracks of the ball nut.

18. (cancelled)

19. (previously presented) The arrangement of claim 1, wherein said housing is at least partly filled with a lubrication agent.

20. (previously presented) A vehicle having steering wheels and including an electrical motor comprising:

an input for receiving an electrical signal from a control unit of said vehicle;

a housing encapsulating a rotating member, said rotating member comprising a ball nut portion;

one or several arrangements for generating a magnetic field with respect to said electrical signal;

a displaceable shaft at each end connected to said steering wheels and comprising a ball screw portion and a ball return portion;

a carrying sleeve comprising, on its outer surface, magnetic elements, said carrying sleeve being provided on said rotating member substantially parallel with an extension direction of said shaft for interaction with said one or several arrangements for generating a magnetic field and rotating said ball nut; and

wherein said one or several arrangements for generating a magnetic field are configured to generate a magnetic field when a current corresponding to said electrical signal flows through said arrangements and to interact with said magnetic elements to produce a torque, which rotates the sleeve and the ball nut forcing said shaft to displace linearly to maneuver said steering wheels.

21. (currently amended) A method of actuating and object using a device functioning as an electric motor , comprising:

a housing encapsulating a rotating member;

one or several arrangements for generating a magnetic field due to an electrical current corresponding to a control signal;

a displaceable shaft at least partly being arranged as a ball return;

said rotating member having a portion being provided as a ball nut: and

wherein the method includes the steps of:

arranging magnetic elements on an outer surface of said rotating member substantially parallel with an extension direction of said shaft for interaction with said arrangement and rotating said ball nut, and energizing said one or several arrangements for generating a magnetic field to rotate said rotating member and transforming said rotating member to a linear movement.

22. (cancelled)